REMARKS

This Amendment is filed in response to the Final Office Action dated August 27, 2002 and the telephone interview with the examiner on November 14, 2002. Applicant initial notes with appreciation the courtesies extended by the Examiner to Applicant's counsel in the interview.

In response to the Office Action, Applicant has amended independent Claim 1 and cancelled dependent Claims 10-13. Applicant respectfully submits that the claims of the application include recitations that patentably define over the cited references, taken either individually or in combination. In light of this, Applicant respectfully requests reconsideration and allowance of the application.

I. The Claims Are Definite

On page 5, the Office Action rejects all of the claims of the application under 35 U.S.C. § 112, second paragraph. The Office Action alleges that the term "exit of the paper machine" is indefinite. The Office Action's rejection turns on the issue of the proper definition of the term "paper machine." Specifically, the Office Action cites U.S. Patent No. 5,821,990 to Rudt, which defines the paper machine as including all of the following sections: forming, pressing, drying, calendaring, and coating, and asks Applicant to define which exit is referred to in the claim.

In response, Applicant respectfully submits that the term "paper machine" as used in the art does not necessarily refer to a machine that includes all of the sections listed in the Rudt '990 patent. For example, some in the art refer to the forming, pressing, and drying section as the paper machine with the remaining sections referred to as a treatment process.

With regard to the claims, Applicant has removed the phrase "from an exit" from independent Claim 1. As now recited, the paper is formed in a manufacturing process and treated in a treating process. Both of these processes may be present in a paper machine such as the one described in the Rudt '990 patent, where all of the sections are in integral machinery or the treatment process may be separate from the manufacturing process. In either case, the claim is written to recite that the paper web is subjected to both a manufacturing process and a treatment process and that that imaging of the paper web is performed either before or after the

treatment process. Applicant respectfully submits that one skilled in the art will understand from the claim that the paper web is formed and then treated and the images of the paper web may be taken either before or after the treatment process. As such, Applicant respectfully submits that the claims are definite.

II. The Claims Are Patentable

The Office Action has rejected all of the claims under 35 U.S.C. § 103(a). Specifically, the Office Action has rejected the claims as obvious in light of the Rudt '990 patent by itself or in combination with one of the following references: U.S. Patent No. 5,822,070 to Syré; Tappi article by Vickery; U.S. Patent No. 5,011,573 to Niemi; U.S. Patent No. 5,113,195 to Dobbie and U.S. Patent No. 5,696,591 to Bilhorn et al. Applicant respectfully disagrees with these rejections in light of the following comments.

As discussed in the telephone interview with the Examiner and as reiterated below, Applicant respectfully submits that none of the cited references, taken either individually or in combination, teaches or suggests the step of analyzing images from the thermal camera as the images are captured by the thermal camera on a continual basis in order to detect defects in the paper web based on the images as recited in amended independent Claim 1. The emphasis here is the direct use of the images to detect defects on a continual basis, which is not taught or suggested by the cited references. Specifically, in the present invention, the web is monitored with a thermal camera to continuously control the quality of the web. The actual images from the camera themselves are directly and continuously analyzed by the person controlling the process to detect defects. If the controller finds a defect in the web illustrated in the images, the controller begins altering the process parameters immediately to remove those unwanted features he or she found in the web from the images. The idea is that immediately, when something unwanted in the web is discovered from the images provided by the camera, the process is controlled to remove the defects in a real time basis.

This is contrary to the cited references. In the prior art, the camera images are only used as a secondary or a back up source of information. They are not used directly and continuously to detect defects in the web as the images are captured, as recited in amended independent Claim 1. Instead, as described at col. 7, line 23 - col. 8, line 15, the Rudt '990 patent uses deviation detectors to directly detect defects in the paper web, and the camera images are only used later as a secondary source to discover problems with the paper web. This makes the system of the Rudt '990 patent less robust than the claimed invention.

More specifically, the Rudt '990 patent discloses a system having a monitoring means (10) having cameras to capture pictures of the web. The pictures received from the monitoring means are converted to a digital form and stored in a data storage means. Further, the system of the Rudt '990 patent discloses deviation detectors (38), which are not defined but are discussed as separate devices from the monitoring system. The deviation detectors detect deviations in the paper web separately from the monitoring means. Further, when the deviation detectors (38) detect a deviation, the detectors send a deviation signal to inform the control system (46) about the deviation. Only after the deviation detectors have detected a defect is the stored digital data from the images taken by the cameras of the monitoring means searched to display the defects sensed by the deviation detectors.

Importantly, the images from the camera are not used directly and continuously as the images are captured to determine deviations and control or adjust the manufacturing process, as recited in amended independent Claim 1. Instead, the detection of defects in the paper web in the Rudt '990 patent is from the deviation detectors 38, not the images from the camera. In other words, a person using the system of the Rudt '990 patent does not directly and continuously analyze the images from the camera to detect defects in the web. As the Rudt '990 patent fails to teach or suggest direct use of the images to detect defects in the paper web, Applicant respectfully submits that amended independent Claim 1, as well as the claims that depend therefrom, is patentable over the cited reference.

Combining the Rudt '990 patent with the Syré '070 patent does not render the claims of the present invention obvious. The Rudt '990 patent discloses that the images from the camera are used only as secondary data to detect defects in the web. The images are converted to digital

form and saved to a storage means and are only used if the deviation detectors sense a defect, instead of using the images, as such, to directly and continuously control the process. Combining the Syré '070 patent to the Rudt '990 patent only leads to a system that receives the images from the cameras, translates them to digital form, and stores them for later possible use and not a system that directly and continuously uses the images to control the process.

Additionally, combining the Vickery article with the Rudt '990 patent would lead to a similar solution to that of the Rudt '990/Syré '070 combination, which means that images from the digital camera would be translated to digital format and saved for possible later use. Combining the Niemi '573 patent with the Rudt '990 patent would also have a similar result.

In light of this, Applicant respectfully submits that none of cited references, taken either individually or in combination, teaches or suggests the claimed invention. As such, Applicant respectfully submits that amended independent Claim 1, as well as the claims that depend therefrom, is patentable over the cited references.

CONCLUSION

In view of the amended claim and the remarks presented above, it is respectfully submitted that all of the present claims of the application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required

therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office at Fax No. 703-872-9311 on the date shown below. Elaine Kelly (Type or print name of person signing certification.) Elaine Kelly 11-25-02 Signature Date	I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on November 25, 2002. _____ _____

CLT01/4564029v1

Version with Markings to Show Changes Made:

In the Claims:

Please cancel Claims 10-13, and amend Claim 1 as follows:

1. (Twice Amended) A method for monitoring and controlling quality of a paper web as the paper web is being manufactured [in a paper machine], comprising:

conveying the paper web [from an exit of] through a [the] paper machine where the paper web is formed as part of a manufacturing process and thereafter treating the paper web by subjecting the paper web to a treatment process;

imaging the paper web with a thermal camera on a continual basis;

analyzing images from the thermal camera as the images are captured by the thermal camera on a continual basis in order to detect defects in the paper web based on the images; and

adjusting at least one of the manufacturing process and the treatment process for the paper web based on the detected defects determined from the images.